

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
23 June 2005 (23.06.2005)

PCT

(10) International Publication Number
WO 2005/056586 A1

(51) International Patent Classification⁷: C07K 14/28, C12N 15/31, G01N 33/53, A61K 39/106

(21) International Application Number: PCT/EP2004/053342

(22) International Filing Date: 8 December 2004 (08.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03104603.0 9 December 2003 (09.12.2003) EP

(71) Applicant (for all designated States except US): AKZO NOBEL N.V. [NL/NL]; Velperweg 76, NL-6824 BM Arnhem (NL).

(72) Inventor; and

(75) Inventor/Applicant (for US only): VERMELJ, Paul [NL/NL]; Lepelstraat 3, NL-5845 BK St. Anthonis (NL).

(74) Agents: KEUS, J. et al.; Intervet International B.V., P.O. Box 31, NL-5830 AN Boxmeer (NL).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

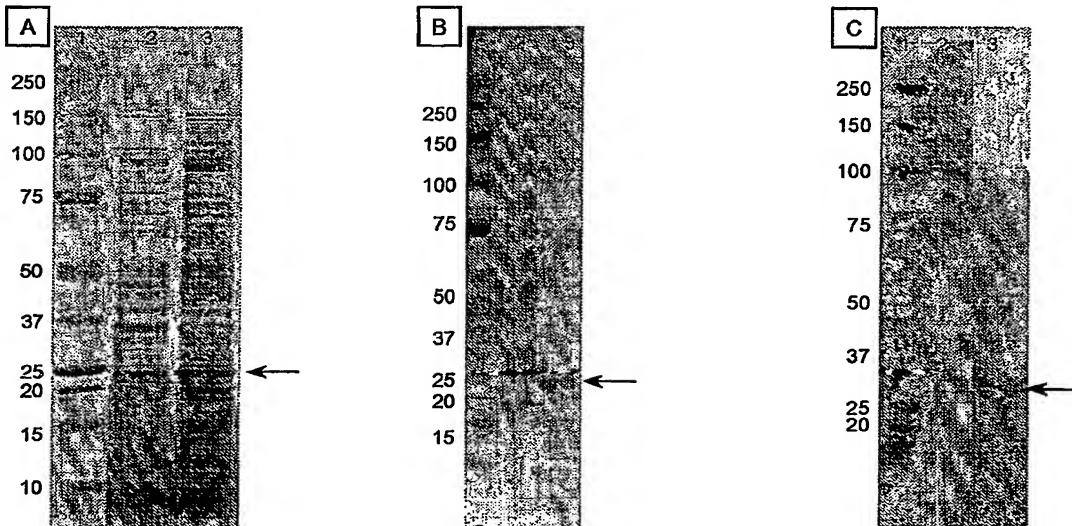
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

[Continued on next page]

(54) Title: LAWSONIA INTRACELLULARIS 26 KD SUBUNIT VACCINE



WO 2005/056586 A1

(57) Abstract: The present invention relates i.a. to nucleic acids encoding novel *Lawsonia intracellularis* proteins. It furthermore relates to DNA fragments, recombinant DNA molecules and live recombinant carriers comprising these sequences. Also it relates to host cells comprising such nucleic acids, DNA fragments, recombinant DNA molecules and live recombinant carriers. Moreover, the invention relates to proteins encoded by these nucleotide sequences and to their use for the manufacturing of vaccines. The invention also relates to vaccines for combating *Lawsonia intracellularis* infections and methods for the preparation thereof. Finally the invention relates to diagnostic tests for the detection of *Lawsonia intracellularis* antigens and of antibodies against *Lawsonia intracellularis*.



- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.